

Claims

1. Method for drying articles which have been treated (1),
the treated articles (1) being transported along a predefined transport path, a
5 gaseous drying medium being blown onto the treated articles (1) with a
first gas stream from above and with a second gas stream from below at at
least one location on the transport path,
a first pressure associated with the first gas stream and a second pressure
associated with the second gas stream being detected, and
10 the first gas stream being regulated in dependence on the first pressure and the
second gas stream being regulated in dependence on the second
pressure,
characterised in that
a temperature of the first and/or second gas stream is detected and fan means
15 (16, 17) for generating the first and/or second gas stream are activated in
such a way, and/or the first and/or second gas stream is regulated in such
a way, that the temperature detected is regulated to a predefined value.
2. Method according to claim 1, **characterised in that** the first and second
20 gas streams are regulated in such a way that the treated articles are
maintained in suspension at the at least one location.
3. Method according to claim 1 or 2, **characterised in that** for temperature
regulation a rotational speed of the fan means is changed by activation of
25 the fan means (16, 17).
4. Method according to one of the preceding claims, **characterised in that** a
thickness of the treated article (1) is detected and in that a direction of
either the first gas stream or the second gas stream is reversed if the
30 thickness of the treated article (1) exceeds a predefined thickness.
5. Apparatus for drying articles which have been treated (1), comprising

transport means (2, 3) for transporting the treated articles (1) along a predefined transport path,

a first (4) and a second (5) gas outlet device which are arranged opposite one another above and below the transport path and which each have at least one gas outlet aperture (29) facing towards the transport path, and

fan means (16, 17) for supplying a gaseous drying medium to the first and to the second gas outlet device via a respective first (8) and second (9) feed line,

there being associated with each of the first and second gas outlet devices (4, 5) regulating means (18, 19) for regulating a gas flow of the gaseous drying medium through the respective gas outlet device (4, 5) and pressure sensors (10, 12) for detecting a pressure generated by each respective gas flow, and

control means (35) being provided which are so configured that they activate the regulating means (18, 19) in dependence on the pressure detected by the respective sensor means (10, 12),

characterised in that

at least one temperature sensor (11, 13) is arranged in the first (8) and/or the second (9) feed line, and the control means are configured to activate the fan means (16, 17) and/or the regulating means (18, 19) in such a way that the temperature detected by the at least one temperature sensor (11, 13) is regulated to a predefined value.

6. Apparatus according to claim 5, **characterised in that** the first and second gas outlet devices (4, 5) include gas guidance elements which are arranged adjacent to the respective at least one gas outlet aperture (29).

7. Apparatus according to claim 5 or 6, **characterised in that** the first and second gas outlet devices (4, 5) are in each case configured in the form of a nozzle.

8. Apparatus according to claim 7, **characterised in that** the nozzle (4, 5) includes a nozzle plate (28) which extends transversely to the transport

path over its full width and is arranged parallel to the transport path, nozzle apertures (29) being provided in the nozzle plate (28) to allow the gaseous drying medium to pass through.

- 5 9. Apparatus according to claim 8, **characterised in that** the nozzle apertures (29) include elongated slits.

- 10 10. Apparatus according to claim 8 or 9, **characterised in that** the nozzle apertures (29) include bores arranged in a row transversely to the direction of the transport path.

- 15 11. Apparatus according to any one of claims 8-10, **characterised in that** at least two rows of nozzle apertures (29) are arranged side-by-side in the direction of the transport path.

- 20 12. Apparatus according to any one of claims 5-11, **characterised in that** the regulating means (18, 19) are arranged respectively in the first (8) and second (9) feed lines.

- 25 13. Apparatus according to claim 12, **characterised in that** the regulating means (18, 19) include a flap which is arranged in the first (8) or second (9) feed line such that the respective feed line (8, 9) is at least partially closable with the flap.

- 30 14. Apparatus according to claim 12 or 13, **characterised in that** the regulating means (18, 19) include a valve.

15. Apparatus according to any one of claims 12-14, **characterised in that** the pressure sensor means (10, 12) are arranged between the respective regulating means (18, 19) and the gas outlet devices (4, 5).

16. Apparatus according to any one of claims 5-15, **characterised in that** the transport means include rollers (2, 3) which are arranged above and below the transport path and are driveable to transport the treated articles (1).
- 5 17. Apparatus according to claim 16, **characterised in that** no rollers (2, 3) are arranged between the first gas outlet device (4) and the second gas outlet device (5).
- 10 18. Apparatus according to claim 16 or 17, **characterised in that** the first and second gas outlet devices (4, 5) each have recesses (33) for the rollers (3) in edges arranged transversely to the direction of the transport path.
- 15 19. Apparatus according to any one of claims 5-18, **characterised in that** the apparatus includes a closed housing (6) which surrounds the apparatus and has an entry opening (7) for introducing the treated articles (1) and an exit opening (31) for discharging the treated articles (1).
- 20 20. Apparatus according to claim 19, **characterised in that** an evacuation duct (27) is provided to evacuate the gaseous drying medium from the housing (6).
- 25 21. Apparatus according to claim 20, **characterised in that** extraction means (23) are associated with the evacuation duct (27), in that further pressure sensor means (24) are arranged in the housing (6) at a distance from the gas outlet devices (4, 5), and in that the control means (36) are configured to activate the extraction means (23) in such a way that a pressure detected by the further pressure sensor means (24) is maintained at a constant predefined value.
- 30 22. Apparatus according to any one of claims 19-21, **characterised in that** the housing (6) includes a first and second housing part, the transport means (2, 3) and the first (4) and second (5) gas outlet devices being

accommodated in the first housing part and the fan means (16, 17) and the regulating means (18, 19) being accommodated in the second housing part (6).

- 5 23. Apparatus according to claim 22, **characterised in that** there is provided an intake duct (26) for fresh gaseous drying medium arranged between the first and second housing parts.
- 10 24. Apparatus according to any one of claims 5-23, **characterised in that** at least one temperature sensor (11, 13) and at least one gas heating means are arranged in the first (8) or second (9) feed line, and in that the control means are configured to activate the gas heating means in such a way that the temperature detected by the at least one temperature sensor is regulated to a predefined value.
- 15 25. Apparatus according to any one of claims 5-24, **characterised in that** the apparatus includes at least two pairs of first (4) and second (5) gas outlet devices.
- 20 26. Apparatus according to any one of claims 5-25, **characterised in that** the apparatus is configured for drying plate-like treated articles (1).
- 25 27. Apparatus according to any one of claims 5-26, **characterised in that** means (38) for detecting a thickness of the treated articles (1) are provided, and in that the control means (35) are so configured that they activate the fan means (16, 17) to reverse the gas flow either through the first gas outlet device (4) or through the second gas outlet device (5) if the thickness of the treated articles exceeds a predefined thickness.
- 30 28. Apparatus according to claim 27, **characterised in that** the means for detecting the thickness of the treated articles (1) include sensor means (38) for determining the thickness of the treated articles (1).

29. Apparatus according to any one of claims 5-28, **characterised in that** the apparatus is configured for carrying out the method according to any one of claims 1 to 4.